

| | | | |
|--|--|--|--------------------------------------|
| Substitute Form PTO-1449 (Modified) | U.S. Department of Commerce Patent and Trademark Office | Attorney's Docket No. 14564-021US1 | Application No. 10/597,300 |
| Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b)) | | Applicant Greg Charache et al. | |
| | | Filing Date July 19, 2006 | Group Art Unit |

| U.S. Patent Documents | | | | | | | |
|-----------------------|-----------|-----------------|------------------|-------------------|-------|----------|----------------------------|
| Examiner Initial | Desig. ID | Document Number | Publication Date | Patentee | Class | Subclass | Filing Date If Appropriate |
| /PN/ | AA | 4,013,338 | 03/22/77 | Sato et al. | | | |
| | AB | 4,057,408 | 11/08/77 | Pierson et al. | | | |
| | AC | 4,095,875 | 06/20/78 | Lee et al. | | | |
| | AD | 4,514,053 | 04/30/85 | Borrelli et al. | | | |
| | AE | 4,714,902 | 12/22/87 | Rokni et al. | | | |
| | AF | 4,834,474 | 05/30/89 | George et al. | | | |
| | AG | 4,942,102 | 07/17/90 | Keys et al. | | | |
| | AH | 4,995,050 | 02/19/91 | Waarts et al. | | | |
| | AI | 5,020,153 | 05/28/91 | Choa et al. | | | |
| | AJ | 5,043,991 | 08/27/91 | Bradley | | | |
| | AK | 5,115,338 | 05/19/92 | DiGiovanni et al. | | | |
| | AL | 5,185,754 | 02/09/93 | Craig et al. | | | |
| | AM | 5,319,668 | 06/07/94 | Luecke | | | |
| | AN | 5,335,098 | 08/02/94 | Leyva et al. | | | |
| | AO | 5,337,328 | 08/09/94 | Lang et al. | | | |
| | AP | 5,365,541 | 11/15/94 | Bullock | | | |
| | AQ | 5,392,308 | 02/21/95 | Welch et al. | | | |
| | AR | 5,440,669 | 08/08/95 | Rakuljic et al. | | | |
| | AS | 5,491,570 | 02/13/96 | Rakuljic et al. | | | |
| | AT | 5,499,261 | 03/12/96 | Welch et al. | | | |
| | AU | 5,537,432 | 07/16/96 | Mehuys et al. | | | |
| | AV | 5,592,503 | 01/07/97 | Welch et al. | | | |
| | AW | 5,602,864 | 02/11/97 | Welch et al. | | | |
| | AX | 5,629,954 | 05/13/97 | Jansen et al. | | | |
| | AY | 5,651,018 | 07/22/97 | Mehuys et al. | | | |
| | AZ | 5,684,611 | 11/04/97 | Rakuljic et al. | | | |
| ▼ | AAA | 5,684,900 | 11/04/97 | Nishiwaki et al. | | | |

| | |
|--|-----------------|
| Examiner Signature <i>/Phillip Nguyen/ (10/08/2009)</i> | Date Considered |
| EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. | |

| | | | | |
|--|--|--|---------------------------------------|-------------------------------|
| Substitute Form PTO-1449 (Modified) | | U.S. Department of Commerce Patent and Trademark Office | Attorney's Docket No. 14564-021US1 | Application No. 10/597,300 |
| Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b)) | | Applicant Greg Charache et al. | | |
| | | Filing Date July 19, 2006 | Group Art Unit | |

U.S. Patent Documents

| Examiner Initial | Desig. ID | Document Number | Publication Date | Patentee | Class | Subclass | Filing Date If Appropriate |
|------------------|-----------|--------------------|------------------|-----------------------|-------|----------|----------------------------|
| /PN/ | ABB | 5,691,989 | 11/25/97 | Rakuljic et al. | | | |
| | ACC | 5,754,574 | 05/19/98 | Lofthouse-Zeis et al. | | | |
| | ADD | 5,777,763 | 07/07/98 | Tomlinson et al. | | | |
| | AEE | 5,793,784 | 08/11/98 | Wagshul et al. | | | |
| | AFF | 5,796,096 | 08/18/98 | Rakuljic et al. | | | |
| | AGG | 5,798,859 | 08/25/98 | Colbourne et al. | | | |
| | AHH | 5,825,792 | 10/20/98 | Villeneuve et al. | | | |
| | AII | 5,838,712 | 11/17/98 | Kraenert et al. | | | |
| | AJJ | 5,870,417 | 02/09/99 | Verdiell et al. | | | |
| | AKK | 6,125,222 | 09/26/00 | Anthon | | | |
| | ALL | 6,192,062 | 02/20/01 | Sanchez-Rubio et al. | | | |
| | AMM | 6,198,759 | 03/06/01 | Broderick et al. | | | |
| | ANN | 6,208,679 | 03/27/01 | Sanchez-Rubio et al. | | | |
| | AOO | 6,215,801 | 04/10/01 | Ackerman et al. | | | |
| | APP | 6,233,259 | 05/15/01 | Ventrudo et al. | | | |
| | AQQ | 6,269,203 | 07/31/01 | Davies et al. | | | |
| | ARR | RE 37,354 | 09/04/01 | Welch et al. | | | |
| | ASS | 6,292,498 | 09/18/01 | Pfaff | | | |
| | ATT | 6,327,292 | 12/04/01 | Sanchez-Rubio et al. | | | |
| | AUU | 6,330,257 | 12/11/01 | Major, Jr., et al. | | | |
| | AVV | 6,363,092 | 03/26/02 | Botez et al. | | | |
| | AWW | 6,363,097 | 03/26/02 | Linke et al. | | | |
| | AXX | 6,455,341 | 09/24/02 | Macomber | | | |
| | AYY | 6,529,542 | 03/04/03 | Karlsen et al. | | | |
| | AZZ | 6,586,141 | 07/01/03 | Efimov et al. | | | |
| | AAAA | 6,673,497 | 01/06/04 | Efimov et al. | | | |
| ↓ | ABBB | US 2004/0013156 | 01/22/04 | Deng et al. | | | |

| | |
|---|-----------------|
| Examiner Signature /Phillip Nguyen/ (10/08/2009) | Date Considered |
|---|-----------------|

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

| | | | | |
|--|--|--|---------------------------------------|-------------------------------|
| Substitute Form PTO-1449 (Modified) | | U.S. Department of Commerce Patent and Trademark Office | Attorney's Docket No. 14564-021US1 | Application No. 10/597,300 |
| Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b)) | | Applicant Greg Charache et al. | | |
| | | Filing Date July 19, 2006 | Group Art Unit | |

U.S. Patent Documents

| Examiner Initial | Desig. ID | Document Number | Publication Date | Patentee | Class | Subclass | Filing Date If Appropriate |
|------------------|-----------|-----------------|------------------|----------------|-------|----------|----------------------------|
| /PN/ | ACCC | US 2004/0013157 | 01/22/04 | Deng et al. | | | |
| | ADDD | US 2005/0018743 | 01/27/05 | Volodin et al. | | | |
| | AEEE | US 2005/0031264 | 02/10/05 | Volodin et al. | | | |
| | AFFF | US 2005/0207466 | 09/22/05 | Glebov et al. | | | |
| | AGGG | 7,031,573 | 04/18/06 | Volodin et al. | | | |
| | AHHH | US 2006/0215972 | 09/28/06 | Volodin et al. | | | |
| | AIII | 7,125,632 | 10/24/06 | Volodin et al. | | | |
| | AJJJ | 7,177,340 | 02/13/07 | Lang et al. | | | |
| | AKKK | 7,212,554 | 05/01/07 | Zucker et al. | | | |
| | ALLL | 7,248,617 | 07/24/07 | Volodin et al. | | | |
| | AMMM | 7,248,618 | 07/24/07 | Volodin et al. | | | |
| | ANNN | 7,273,683 | 09/25/07 | Volodin et al. | | | |
| ↓ | AOOO | 7,298,771 | 11/20/07 | Volodin et al. | | | |

Foreign Patent Documents or Published Foreign Patent Applications

| Examiner Initial | Desig. ID | Document Number | Publication Date | Country or Patent Office | Class | Subclass | Translation | |
|------------------|-----------|-----------------|------------------|--------------------------|-------|----------|-------------|----|
| | | | | | | | Yes | No |
| /PN/ | APPP | EP 0 310 438 | 04/05/89 | Europe | | | | |
| /PN/ | AQQQ | WO 01/41270 | 06/07/01 | WIPO | | | | |
| /PN/ | ARRR | WO 03/045863 | 06/05/03 | WIPO | | | Abst | |

Other Documents (include Author, Title, Date, and Place of Publication)

| Examiner Initial | Desig. ID | Document |
|------------------|-----------|---|
| /PN/ | ASSS | Bayram et al., "Operation of a single mode external-cavity laser diode array near 780 nm", Review of Scientific Instruments, Vo. 73, No. 12, December 2002, pp. 4169-4971 |
| /PN/ | ATTT | Borgman et al., "Photothermal Refractive Effect in Silicate Glasses", Sov. Phys. Dokl., vol 34, no. 11, pp. 1011-1013, 1989 |
| /PN/ | AUUU | Braiman et al., "Synchronization of Arrays of High Power Lasers", Solid State and Diode Laser Technology Review, 2003, 4 pages |

| | | |
|--------------------|-------------------------------|-----------------|
| Examiner Signature | /Phillip Nguyen/ (10/08/2009) | Date Considered |
|--------------------|-------------------------------|-----------------|

EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

| | | | | |
|---|--|--|--|--------------------------------------|
| Substitute Form PTO-1449 (Modified) | | U.S. Department of Commerce Patent and Trademark Office | Attorney's Docket No. 14564-021US1 | Application No. 10/597,300 |
| Information Disclosure Statement by Applicant (Use several sheets if necessary) | | Applicant Greg Charache et al. | | |
| | | Filing Date July 19, 2006 | Group Art Unit | |
| (37 CFR §1.98(b)) | | | | |

Other Documents (include Author, Title, Date, and Place of Publication)

| Examiner Initial | Desig. ID | Document | | |
|------------------|-----------|--|--|--|
| /PN/ | AVVV | Chann et al., "Frequency-narrowed external-cavity diode-laser-array bar", Optics Letters, Vol. 25, No. 18, September 15, 2000, pp. 1352-1354 | | |
| | AWWW | Ciapurin et al., "High-Power Incoherent Beam Combining with Bragg Grating in Photosensitive Glasses", Proc. Of Solid State and Diode Lasers Technical Review, Albuquerque, New Mexico, 2002 | | |
| | AXXX | Danue et al., "Spectral Beam Combining of a Broad-Stripe Diode Laser Array in an External Cavity", Massachusetts Institute of Technology, 2 pages, May 10, 2000 | | |
| | AYYY | Datta et al., "Modeling of Nonideal Volume Bragg Reflection Gratings in Photosensitive Glass Using a Perturbed Transmission Matrix Approach", IEEE Journal of Quantum Electronics, vo. 40, 2no. 5, May 2004, pp. 580-589 | | |
| | AZZZ | Earles et al., "1.1W Continuous Wave Narrow Spectral Width (< 1Å) Emission from Broad Stripe Distributed Feedback Diode Lasers", Appl. Phys. Lett., vol. 73, pp. 2072-2074 , 1998 | | |
| | AAAAA | Glebov, L., "Volume Diffractive Elements in Photosensitive Inorganic Glass for Bean Combining", Conference Digest, Paper Code FA-5, Albuquerque, New Mexico, May 21-24, 2001 | | |
| | ABBBB | Glebov, L., "Optimizing and Stabilizing Diode Laser Spectral Parameters", Photonics Spectra, University of Central Florida, 2 pages, January 2005 | | |
| | ACCCC | Kanskar et al., "Performance and Reliability of ARROW single Mode & 100µm Laser Diode and the Use of NAM in Al-free Lasers", SPIE 4995, presented at Photonics West, 2003, 13 pages. | | |
| | ADDDD | Levron et al., "Magnetic Resonance Imaging of Hyperpolarized ¹²⁹ Xe Produced by Spin Exchange with Diode Laser Pumped Cs", Appl. Phys. Lett., vol. 73, pp. 2666-2668. 1998 | | |
| | AEEEE | Liu et al., "Injection Locking of Individual Broad-Area Lasers in an Integrated High-Power Diode Array", Appl. Phys. Lett., vol. 81, no. 6, pp. 978-980, August 5, 2002 | | |
| | AFFFF | Liu et al., "Simultaneous Injection Locking of Couple of High-Power Broad-Area Lasers Driven by a Common Current Source", Applied Optics, vol. 41, no. 24, August 20, 2002, pp. 5036-5039 | | |
| | AGGGG | LuxxMaster™ Wavelength Stabilizer Elements for High Power Lasers and Laser Arrays, Brochure, PDLD, Inc., 2001 | | |
| | AHHHH | Marcianet et al., "Lateral Spatial Effects of Feedback in Gain-Guided and Broad-Area Semiconductor Lasers", IEEE Jl. Quantum Electron., vol. 32, pp. 1630-1635 , 1996 | | |
| | AIIII | Mizunami et al., "Bragg Gratings in Multimode and Few-Mode Optical Fibers", Jl. Lightwave Tech. Lett., vol. 18, pp. 230-235 , 2000 | | |
| | AJJJJ | Moser et al., "Volume Bragg Grating Devices", Massachusetts Institute of Technology, pp. 644-645, March 28, 2003 | | |
| | AKKKK | Nelson et al., "Spin Exchanged Optical Pumping using a Frequency Narrowed High Power Diode Laser", Appl. Phys. Lett., vol. 76, pp. 1356-1358 , 2000 | | |
| | ALLLL | Romalis, M.V., "Narrowing of High Power Diode Laser Arrays using Reflection Feedback from an Etalon", Appl. Phys. Lett., vol. 77, pp. 1080-1081, 2000 | | |
| | AMMMM | Szkopek et al., "Novel Multimode Fiber for Narrow Band Bragg Gratings", IEEE Jl. Select., Topics in Quantum Electronics, vol. 7, pp. 425-433 , 2001 | | |
| ↓ | ANNNN | Volodin et al., "Improvements of performance of High-Power Multimode Laser Diodes and Arrays Achieved by Use of Volume Bragg Grating™ Technology", Solid State and Diode Laser Technology Review, 2004, 19 pages | | |

| | |
|--|-----------------|
| Examiner Signature /Phillip Nguyen/ (10/08/2009) | Date Considered |
| EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. | |

| | | | |
|--|--|---------------------------------------|-------------------------------|
| Substitute Form PTO-1449 (Modified) | U.S. Department of Commerce Patent and Trademark Office | Attorney's Docket No. 14564-021US1 | Application No. 10/597,300 |
| Information Disclosure Statement by Applicant (Use several sheets if necessary) (37 CFR §1.98(b)) | | Applicant Greg Charache et al. | |
| | | Filing Date July 19, 2006 | Group Art Unit |

| Other Documents (include Author, Title, Date, and Place of Publication) | | |
|--|-----------|---|
| Examiner Initial | Desig. ID | Document |
| /PN/ | AOOOO | Volodin et al., "Wavelength Stabilization and Spectrum Narrowing of High-Power Multimode Laser Diodes and Arrays by Use of Volume Bragg Gratings", Optical Society of America, vol. 29, issue 16, August 2004, Abstract |
| | APPPP | Volodin et al., "Applications of the Volume Bragg Grating™ Technology to High-Brightness Laser Diode Arrays", Solid State and Diode Laser Technology Review, 2005, 5 pages |
| | AQQQQ | Yan et al., "Measurement of Diode Laser Characteristics Affecting Tunability with an External Grating", J. Opt. Soc. Am., vol. 9, no. 11, November 1992, pp. 2122-2127 |
| | ARRRR | Zheng et al., "Effective Bandwidth Reduction for a High-Power Laser-Diode Array by an External-Cavity Technique", Optics Letters, vol. 30, no. 18, September 15, 2005, pp. 2424-2426 |
| | ASSSS | Zhu et al., "Spectrally Narrowed External-Cavity High-Power Stack of Laser Diode Arrays", Optics Letters, vol. 30, no. 11, June 1, 2005, pp. 1342-1344 |
| | ATTTT | Supplementary Search Report from corresponding European Application No. 05 810 008.2-222, issued by the European Patent office on February 21, 2008, 3 pages |
| ↓ | AUUUU | Communication from corresponding European Application No. 05 810 008.2-222, issued by the European Patent office on May 13, 2008, 5 pages |

| | | |
|--|-------------------------------|-----------------|
| Examiner Signature | /Phillip Nguyen/ (10/08/2009) | Date Considered |
| EXAMINER: Initials citation considered. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant. | | |